



U.S. Army Corps
of Engineers
Norfolk District

CRANEY ISLAND

Mosquito Control Update

www.nao.usace.army.mil/mosquitoes

Fall 2004

ABOUT CRANEY ISLAND

The Craney Island Dredged Material Management Area is a 2,500-acre confined dredged material placement site located in Portsmouth, VA. Plans for the site were developed in the early 1940s to provide a long-term location for material dredged from the channels and ports in the Hampton Roads area. Craney Island is vital to the local economy and allows the Hampton Roads area to maintain the deepest natural harbor on the East Coast for commercial and naval vessels.

Mosquito Control Efforts

The abundance of water and wetlands in and around Hampton Roads, including Craney Island, creates a prolific breeding ground for mosquitoes. The U.S. Army Corps of Engineers (the Corps) recognizes that our operations at Craney Island contribute to the overall mosquito population in Churchland. We are doing our best to be part of the solution and we want to let our neighbors know that we have a comprehensive strategy in place to control the problem.

For more than 10 years the Corps has been working diligently and has spent more than \$1 million to address the mosquito problem at Craney Island. Next year's budget includes \$100,000 for control strategies and increased surveillance. We are committed to being a good neighbor and will continue to coordinate with the City of Portsmouth to ensure that our efforts are effective and safe. We have also teamed up with the Navy to better leverage efforts at both our facilities.

Because Craney Island is home to threatened and endangered species, the Corps must be good stewards of the environment and ensure that our mosquito control plan will have no adverse effect on wildlife or humans.

Our mosquito control strategy is a multi-prong approach, incorporating habitat control, larvae control, adult control and surveillance. The following is a summary of actions the Corps has taken to safely address the mosquito problem.



The Craney Island staff uses this equipment to dig ditches in the dredge material cells to expedite drying out the material.

Habitat Control

- **Aggressive dewatering of the facility** - The Corps has purchased several pieces of specialized equipment to remove water from the dredge material, including a low ground pressure ditcher and a pontoon excavator. This effort to dry out the dredge material not only reduces mosquito-breeding habitat but is also important for maximizing the storage capacity at Craney Island.
- **Grounds maintenance** - The Corps keeps the grass mowed and vegetation cleared to reduce the habitat where mosquitoes live.

Larvae Control

- **Larvicides** - The Corps and the Navy use in-house staff and contractors to apply larvicides such as 'BTI' and to a limited extent 'methoprene' in areas of standing water like drainage ditches and depressions. BTI is a natural bacillus (aerobic bacteria) that kills mosquito larvae. Methoprene is a growth hormone inhibitor which interferes with

MOSQUITO STATISTICS CAN BE DECEIVING...

You might have heard lately that "80% of mosquitoes in Portsmouth are found near Craney Island." This is a misconception, one that we'd like to clear up. The City of Portsmouth has mosquito traps throughout the city, which allow them to gather accurate data on mosquito populations. It is true that 60% of mosquitoes (or 24,000) trapped through the end of September were in a trap on the City landfill, so those mosquitoes are most likely a result of conditions on Corps, Navy and City of Portsmouth property.

But the better question is "What's going on in the neighborhoods?" At the Churchland HS trap, one mile south of Craney Island, only 3,000 mosquitoes have been trapped during the same time frame. In fact, mosquito counts here are 30 percent below the past 4-year average, even though this was one of the wettest summers on record.

Beginning next mosquito season, both the Corps and the Navy will install mosquito traps on our properties so that we can better plan our control strategies. All of this data will be available on our mosquito control website: www.nao.usace.army.mil/mosquitoes

larvae development. Although the applications are considered environmentally friendly, the Corps must be especially careful at Craney Island since the island is host to threatened and endangered species. This year the Corps contracted with the City of Portsmouth to apply methoprene outside the dikes. This was completed on August 20. The Corps also contracted with Angel Systems to do another application of methoprene outside the dikes. This was completed on September 23.

- **Mosquito-eating fish** - The Corps recently stocked ditches and ponds on Craney Island with 3,000 mosquito-eating fish. These *Gambusia holbrooki* are native minnows that feed on mosquitoes and prefer stagnant water where mosquitoes breed. They reproduce rapidly. The Navy has had great success using these fish to address mosquito problems.



Mosquito-eating fish

Aerial Spraying

- **Aerial spraying** of the Dibrom pesticide is the primary method to control the adult mosquito population. The material only works for a short period and rapidly decomposes in the environment. Aerial sprayings are scheduled for times when the adult mosquito population is most active.

At the request of the Corps, the Air Force Reserve has sprayed Craney Island and the surrounding areas more than 20 times since 1996. In 2004, the Air Force Reserve completed aerial sprayings on September 2 and October 6. The Corps also contracted with Kritter Crop Dusting who completed additional aerial sprayings on August 11 and 19, September 25, and October 3. The aerial sprayings have cost approximately \$300,000 over the last decade. The Corps and the Navy are working together to optimize future aerial sprayings.

Surveillance

The Corps has begun to implement the following surveillance activities to enhance mosquito control efforts.

- **Mosquito Traps** - In 2005, the Corps and the Navy will issue a

contract to place mosquito traps on our facilities that will give us better data on mosquito populations and let us target the frequency of adult control measures.

- **Larvae Counts** - The Corps has purchased equipment and trained in-house staff to conduct regular larvae counts so we can apply larvicide when it will be most effective.

- **Use of mapping system to track mosquito data** - The Corps will use a mapping system to track adult trap and larvae count data, along with data provided by the City of Portsmouth. This will be used to help determine when control measures will be most effective and to optimize all mosquito control initiatives.

- **Expert Oversight** - The Corps mosquito program is conducted under the oversight of a mosquito consultant and an in-house environmental scientist. In addition, the Navy has an entomologist and supporting staff.



For more information on the Corps' efforts:

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